

WHAT IS CLAIMED IS:

1 1. A wireless network for providing a packet data call
2 connection between a source mobile station (MS) and a destination
3 mobile station (MS) in a coverage area of said wireless network,
4 said wireless network comprising:
5 a first base station capable of wirelessly communicating with
6 said source mobile station;
7 a second base station capable of wirelessly communicating with
8 said destination mobile station; and
9 a mobile switching center capable of connecting said first and
10 second base stations, wherein said first base station is capable of
11 receiving a first message from said source mobile station
12 requesting an MS-MS packet data call connection to said destination
13 mobile station and, in response to said first message, said first
14 base station initiates establishment of said MS-MS packet data call
15 connection on a local IP network coupling said first and second
16 base stations.

1 2. The wireless network as set forth in Claim 1, wherein
2 said first message comprises an Origination message having a
3 service option field indicating that said MS-MS packet data call
4 connection is requested.

1 3. The wireless network as set forth in Claim 1, wherein
2 said first base station responds to said first message by
3 transmitting a second message to said mobile switching center, said
4 second message indicating that said MS-MS packet data call
5 connection to said destination mobile station is requested.

1 4. The wireless network as set forth in Claim 3, wherein
2 said second message comprises a CM Service Request message
3 containing said service option indicating that said MS-MS packet
4 data call connection is requested and containing a phone number
5 associated with said destination mobile station and an IP address
6 of said first base station.

1 5. The wireless network as set forth in Claim 3, wherein
2 said mobile switching center responds to said second message by
3 transmitting a third message to said second base station, said
4 third message indicating that said MS-MS packet data call
5 connection is requested.

1 6. The wireless network as set forth in Claim 5, wherein
2 said third message is a Paging Request message.

1 7. The wireless network as set forth in Claim 5, wherein
2 said second base station responds to said third message by
3 transmitting a fourth message to said mobile switching center, said
4 fourth message containing an IP address of said second base station
5 on said local IP network.

1 8. The wireless network as set forth in Claim 7, wherein
2 said fourth message comprises a Paging Response message.

1 9. The wireless network as set forth in Claim 7, wherein
2 said mobile switching center responds to said fourth message by
3 transmitting a fifth message to said first base station, said fifth
4 message containing said IP address of said second base station and
5 a mobile identifier value associated with said destination mobile
6 station.

1 10. The wireless network as set forth in Claim 9, wherein
2 said fifth message comprises an Assignment Request message
3 containing said IP address of said second base station said mobile
4 identifier value.

1 11. The wireless network as set forth in Claim 9, wherein
2 said first base station responds to said fifth message by using
3 said IP address of said second base station to establish a packet
4 data bearer connection to said second base station via said local
5 IP network.

1 12. The wireless network as set forth in Claim 11, wherein
2 said first base station transmits said mobile identifier of said
3 destination mobile station to said second base station in order to
4 identify data packets from said source mobile station that are
5 directed to said destination mobile station.

1 13. For use in a wireless network comprising: i) a first base
2 station that wirelessly communicates with a source mobile station
3 (MS), ii) a second base station that wirelessly communicates with a
4 destination mobile station (MS), and iii) a mobile switching center
5 that connects the first and second base stations, a method of
6 providing a MS-MS packet data call connection between the source
7 mobile station and the destination mobile station comprising the
8 steps of:

9 in the first base station, receiving a first message from the
10 source mobile station requesting a MS-MS packet data call
11 connection to the destination mobile station;

12 in response to the first message, establishing the MS-MS
13 packet data call connection on a local IP network coupling the
14 first and second base stations.

1 14. The method as set forth in Claim 13, wherein the first
2 message comprises an Origination message having a service option
3 field indicating that the MS-MS packet data call connection is
4 requested.

1 15. The method as set forth in Claim 13, further comprising
2 the step of transmitting a second message from the first base
3 station to the mobile switching center, the second message
4 indicating that the MS-MS packet data call connection to the
5 destination mobile station is requested.

1 16. The method as set forth in Claim 15, wherein the second
2 message comprises a CM Service Request message containing the
3 service option indicating that the MS-MS packet data call
4 connection is requested and containing a phone number associated
5 with the destination mobile station.

1 17. The method as set forth in Claim 15, further comprising
2 the step of transmitting a third message from the mobile switching
3 center to the second base station in response to the second
4 message, the third message indicating that the MS-MS packet data
5 call connection is requested.

1 18. The method as set forth in Claim 17, wherein the third
2 message is a Paging Request message.

1 19. The method as set forth in Claim 17, further comprising
2 the step of transmitting a fourth message from the second base
3 station to the mobile switching center in response to the third
4 message, the fourth message containing an IP address of the second
5 base station on the local IP network.

1 20. The method as set forth in Claim 19, wherein the fourth
2 message comprises a Paging Response message.

1 21. The method as set forth in Claim 19, further comprising
2 the step of transmitting a fifth message from the mobile switching
3 center to the first base station in response to the fourth message,
4 the fifth message containing the IP address of the second base
5 station and a mobile identifier value associated with the
6 destination mobile station.

1 22. The method as set forth in Claim 21, wherein the fifth
2 message comprises an Assignment Request message containing the IP
3 address of the second base station the mobile identifier value.

1 23. The method as set forth in Claim 21, further comprising
2 the step, in response to the fifth message, of using the IP address
3 of the second base station to establish a packet data bearer
4 connection from the first base station to the second base station
5 via the local IP network.